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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,747	02/08/2002	Ryo Yamada	Y1600.0001/P001	9293

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EXAMINER

LI, SHI K

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/067,747	Applicant(s) YAMADA, RYO	
	Examiner Shi K. Li	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 7 recites the limitation "said ring map" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 8 recites the limitation "said ring map" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (Y. Ye et al., "On Joint Protection/Restoration in IP-Centric DWDM-Based Optical Transport Networks", IEEE Communications Magazine, June 2000) in view of Li et al. (L. Li et al., "Dynamic Wavelength Routing Using Congestion and Neighborhood Information", IEEE/ACM Transactions on Networking, Vol. 7, No. 5, October 1999).

Regarding claim 1, Ye et al. teaches in FIG. 5 a mesh network consisting of a plurality of nodes OXC1-OXC4, each of said nodes having a cross-connecting function. Ye et al. teaches on page 180, right col., last paragraph that a working path and a backup path are provisioned dynamically. The working path and the backup path form a ring (e.g., see FIG. 5(d)). Ye et al. suggests using least congested path algorithm for selecting the working path and backup path. Li et al. teaches dynamic routing using least-congestion routing. One of ordinary skill in the art would have been motivated to combine the teaching of Li et al. with the mesh network protection/restoration method of Ye et al. because least congestion routing is suggested by Ye et al. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use least congested path algorithm, as taught by Li et al., for dynamically selecting working and backup path in the mesh network protection/restoration method of Ye et al. because least congestion routing is suggested by Ye et al.

Regarding claim 3, Ye et al. teaches DWDM optical fiber communication network.

Regarding claim 9, Ye et al. illustrates in FIG. 5 for failure recovery where traffic is switched from working path to backup path when failure occurs along the working path.

7. Claims 2, 4-5, 7, 10-12, 14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. and Li et al. as applied to claims 1, 3 and 9 above, and further in view of Lu (U.S. Patent 5,815,490).

Ye et al. and Li et al. have been discussed above in regard to claims 1, 3 and 9. Regarding claims 2 and 16, the difference between Ye et al. and Li et al. and the claimed invention is that Ye et al. and Li et al. do not teach a ring map. Lu teaches in FIGS. 4A-4E and FIG. 6a portion of a ring table comprising link information, node ID and ring ID. One of

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ordinary skill in the art would have been motivated to combine the teaching of Lu with the modified protection method of Ye et al. and Li et al. to maintain a ring table because a ring table keeps track of provisioning information that is necessary for performing protection switch. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to maintain a ring table, as taught by Lu, in the modified protection method of Ye et al. and Li et al. because a ring table keeps track of provisioning information that is necessary for performing protection switch.

Regarding claim 17, Ye et al. teaches DWDM optical fiber communication network.

Regarding claims 4-5, 10-12 and 18-19, Lu teaches in FIG. 4A that a ring has a ring ID and teaches in FIG. 4D that a node has node ID. In a situation where a node belongs to a plurality of rings, it is obvious to use the ring ID together with the node ID to identify a node. That is, if a node belongs to the same ring, it has the same ring ID/node ID combination. For two different rings, a node common to the two rings has different ring ID/node ID combinations.

Regarding claims 7 and 20, Lu teaches in FIG. 1B a subnetwork controller SNC for ring management.

Regarding claim 14, Lu teaches in col. 8, lines 22-46 WDM-based optical network.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. and Li et al. as applied to claims 1, 3 and 9 above, and further in view of Sparks et al. (U.S. Patent Application Pub. 2002/0080437 A1).

Ye et al. and Li et al. have been discussed above in regard to claims 1, 3 and 9. The difference between Ye et al. and Li et al. and the claimed invention is that Ye et al. and Li et al. do not teach shared protection. Sparks et al. teaches in FIG. 2 and paragraphs [0007] and [0011]

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the sharing of protection paths. One of ordinary skill in the art would have been motivated to combine the teaching of Sparks et al. with the modified protection method of Ye et al. and Li et al. because sharing protection bandwidth improves bandwidth efficiency. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to share protection bandwidth, as taught by Sparks et al., in the modified protection method of Ye et al. and Li et al. because sharing protection bandwidth improves bandwidth efficiency.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. and Li et al. as applied to claims 1, 3 and 9 above, and further in view of Ramamurthy et al. (R. Ramamurthy et al., "Capacity Performance of Dynamic Provisioning in Optical Networks", Journal of Lightwave Technology, Vol. 19, No. 1, January 2001).

Ye et al. and Li et al. have been discussed above in regard to claims 1, 3 and 9. The difference between Ye et al. and Li et al. and the claimed invention is that Ye et al. and Li et al. do not teach a distributed manner for generating network map and setting up paths. Ramamurthy et al. teaches in p. 42, Section C to use distributed routing protocol such as OSPF and its extension to collect network information. One of ordinary skill in the art would have been motivated to combine the teaching of Ramamurthy et al. with the modified protection method of Ye et al. and Li et al. because a distributed network management system scales well as the size of the network increases and has high reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use distributed routing protocol for generating network map and setting up paths, as taught by Ramamurthy et al., in the modified protection method of Ye et al. and Li et al. because a distributed network management system scales well as the size of the network increases and has high reliability.

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10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al., Li et al. and Lu as applied to claims 2, 4-5, 7, 10-12, 14 and 16-20 above, and further in view of Ramamurthy et al. (R. Ramamurthy et al., "Capacity Performance of Dynamic Provisioning in Optical Networks", Journal of Lightwave Technology, Vol. 19, No. 1, January 2001).

Ye et al., Li et al. and Lu have been discussed above in regard to claims 2, 4-5, 7, 10-12, 14 and 16-20. The difference between Ye et al., Li et al. and Lu and the claimed invention is that Ye et al., Li et al. and Lu do not teach a distributed manner for generating network map and setting up paths. Ramamurthy et al. teaches in p. 42, Section C to use distributed routing protocol such as OSPF and its extension to collect network information. One of ordinary skill in the art would have been motivated to combine the teaching of Ramamurthy et al. with the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use distributed routing protocol for generating network map and setting up paths, as taught by Ramamurthy et al., in the modified protection method of Ye et al., Li et al. and Lu because a distributed network management system scales well as the size of the network increases and has high reliability.

Response to Arguments

11. Applicant's arguments with respect to claims 1-12, 14 and 16-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
28 June 2006



Shi K. Li
Patent Examiner